

coupled to the elongate catheter body, and having a first non-penetrating position and a second tissue penetrating position; and

an actuator member disposed proximate the distal portion and operably coupled to the tissue penetrating member, for moving the tissue penetrating member from one of the first or second positions to the other of the first or second positions, the actuator adding energy to the tissue penetrating member as the tissue penetrating member moves from the first position to the second position.

Sub 65 67. An intravascular therapeutic catheter as in claim 57 wherein the catheter body has a proximal portion and further comprising:

a fluid delivery lumen located in the catheter body extending from the proximal portion to a position proximate the tissue penetrating member for delivering a fluid to the location of the tissue penetrating member.

Sub 68 20. An intravascular therapeutic catheter as in claim 57 wherein:

the tissue penetrating member is adapted for motion about a pivot point between the first non-penetrating position and the second tissue penetrating position; and the second position is defined by maximum storage of energy in the tissue penetrating member thereby defining motion over a limited distance.

Sub 72 21. An intravascular therapeutic catheter comprising:

an elongate catheter body having a distal portion; a tissue penetrating member disposed proximate the distal portion, operably coupled to the elongate catheter

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body, and having a first non-penetrating position and a second tissue penetrating position; and  
an actuator member disposed proximate the distal portion and operably coupled to the tissue penetrating member, for moving the tissue penetrating member from one of the first or second positions to the other of the first or second positions, the tissue penetrating member releasing stored energy as the penetrating member moves from the first position to the second position.

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25. An intravascular therapeutic catheter as in claim 74, wherein the catheter body includes a constraining lumen and the first position of the penetrating member is a constrained position where the tissue penetrating member is located within the constraining lumen, and wherein the second position is an unconstrained position where the tissue penetrating member is not constrained by the constraining lumen.

Sub 5 76 28  
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28. An intravascular therapeutic catheter of claim 74 wherein: the tissue penetrating member is adapted for motion about a pivot point between the first non-penetrating position and the second tissue penetrating position; and  
the second position is defined by complete release of the stored energy thereby defining motion over a limited distance.

Sub D6 80  
C6  
82. An intravascular therapeutic catheter comprising:  
an elongate catheter body having distal portion, and having an axis;  
a tissue penetrating member disposed proximate the distal portion operably coupled to the elongate catheter body and having a first non-penetrating position and a second tissue penetrating position and having a pivot

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point; and  
an actuator member disposed proximate the distal portion and  
operably coupled to the tissue penetrating member, for  
moving the tissue penetrating member from one of the  
first or second positions to the other of the first or  
second positions about the pivot point.

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83. An intravascular therapeutic catheter as in claim 82, wherein  
the catheter body includes a constraining lumen and the actuator  
member moves the tissue penetrating member from the constraining  
lumen within the catheter.

Sub 88  
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C7  
88. An intravascular therapeutic catheter comprising:  
an elongate catheter body having a distal portion and an  
axis;  
a tissue penetrating member having a tissue penetrating tip  
disposed at an angle relative to the axis, the angle  
opening in a proximal direction and being of no more  
than approximately 90 degrees, the tissue penetrating  
member being disposed proximate the distal portion and  
operably coupled to the elongate catheter body and  
having a first non-penetrating position and a second  
tissue penetrating position; and  
an actuator member disposed proximate the distal portion and  
operably coupled to the tissue penetrating member, for  
moving the tissue penetrating member from one of the  
first or second positions to the other of the first or  
second positions in a substantially transverse path  
with respect to the axis.

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C8  
Sub 88  
89. An intravascular therapeutic catheter comprising:  
an elongate catheter body having a distal portion and an  
axis;

C8  
a tissue penetrating member having a tissue penetrating tip disposed at an angle relative to the axis, the angle opening in a proximal direction and being of no more than approximately 90 degrees, the tissue penetrating member being disposed proximate the distal portion and operably coupled to the elongate catheter body and having a first non-penetrating position and a second tissue penetrating position; and

an actuator member disposed proximate the distal portion and operably coupled to the tissue penetrating member, for moving the tissue penetrating member a limited distance from one of the first or second positions in a direction substantially non-parallel to the catheter body to the other of the first or second positions.

Sub 58 91  
C9  
93. An intravascular therapeutic catheter as in claim 91,<sup>89</sup> wherein the actuator member moves the tissue penetrating member along a lateral path with respect to the axis of the catheter body.

Sub 50 94  
97. An intravascular therapeutic catheter as in claim 91,<sup>89</sup> wherein the tissue penetrating member is cooled.

Sub 51 100  
D11  
103. A method for treating cardiac tissue comprising the steps of:

C11  
providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member having a tissue penetrating tip disposed at an angle relative to the axis, the angle opening in a proximal direction and being of no more than approximately 90 degrees, the tissue penetrating member being operably coupled to the catheter body and disposed proximate a distal portion of the catheter

body, the tissue penetrating member having a first non-penetrating position and a second tissue penetrating position;

navigating the catheter through vasculature to a treatment site proximate the cardiac tissue; and

adding energy to the tissue penetrating member to move the tissue penetrating member from the first position in a direction substantially non-parallel to the catheter body to the second position.

Sub 107  
D12  
110. A method for treating cardiac tissue comprising the steps of:

providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member operably coupled to the catheter body and disposed proximate a distal portion of the catheter body, the tissue penetrating member having a first non-penetrating position and a second tissue penetrating position;

navigating the catheter through vasculature to a treatment site proximate the cardiac tissue; and

releasing energy from the tissue penetrating member to move the tissue penetrating member from the first position to the second position.

Sub 113  
D13  
116. A method for treating cardiac tissue comprising the steps of:

providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member operably coupled to the catheter body and disposed proximate a distal portion of the catheter body, the tissue penetrating member having a pivot point, a first non-penetrating position and a

second tissue penetrating position;  
navigating the catheter through vasculature to a treatment  
site proximate the cardiac tissue; and  
moving the tissue penetrating member from one of the first  
or second positions to the other of the first or second  
positions about the pivot point.

C 13114 117. A method for treating cardiac tissue as in claim 116<sup>113</sup> wherein  
the catheter body includes a restraint lumen and the tissue  
penetrating member is restrainable in the restraint lumen; and  
wherein the step of moving the tissue penetrating member  
further comprises moving the tissue penetrating member  
from the restraint lumen whereby the tissue penetrating  
member moves from one of the first or second positions  
to the other of the first or second positions about the  
pivot point.

Sub 117 D14 120. A method for treating cardiac tissue comprising the steps  
of:  
providing an intravascular therapeutic catheter having an  
elongate catheter body, an actuator and a tissue  
penetrating member having a tissue penetrating tip  
disposed at an angle relative to the axis, the angle  
opening in a proximal direction and being of no more  
than approximately 90 degrees, the tissue penetrating  
member being operably coupled to the catheter body and  
disposed proximate a distal portion of the catheter  
body, the tissue penetrating member having a first non-  
penetrating position and a second tissue penetrating  
position;  
navigating the catheter through vasculature to a treatment  
site proximate the cardiac tissue; and  
moving the tissue penetrating member from one of the first

C14  
or second positions to the other of the first or second positions in a substantially transverse path with respect to a longitudinal axis of the catheter body.

Sub 112  
Dis. } 425. A method for treating cardiac tissue comprising the steps of:

C15  
providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member with a tissue penetrating tip, disposed at an angle relative to the catheter body, the angle opening in a proximal direction of no more than approximately 90 degrees, the tissue penetrating member being operable coupled to the catheter body and disposed proximate a distal portion of the catheter body, the tissue penetrating member having a first non-penetrating position and a second tissue penetrating position;

navigating the catheter through vasculature to a treatment site proximate the cardiac tissue; and

moving the tissue penetrating member a limited distance from one of the first or second positions in a direction substantially non-parallel to the catheter body to the other of the first or second positions.

Sub 116  
Dis. } 132. A method for treating cardiac tissue comprising the steps of:

C16  
providing an intravascular catheter of the type having an elongate catheter body and a tissue penetrating member operably coupled to the catheter body and having a tissue penetrating tip disposed at an angle relative to the catheter body, the angle opening in a proximal direction of no more than approximately 90 degrees, the tissue penetrating member being disposed proximate a

C16

distal portion of the catheter body, the penetrating member having a first non-penetrating position and a second tissue penetrating position;  
navigating the catheter through vasculature to a treatment site proximate the cardiac tissue to be treated;  
moving the tissue penetrating member from one of the first or second positions in a direction substantially non-parallel to the catheter body to the other of the first or second positions; and  
delivering a drug comprising a genetic material to the treatment site.

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133. A method for treating cardiac tissue as in claim 132 wherein the genetic material, when incorporated into the tissue penetrating member, results in the expression of therapeutic materials.

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Sub 134

139. A method of treating cardiac tissue as in claim 132 wherein the cardiac tissue is proximate a coronary vessel having a wall and wherein the drug is delivered outside the wall of the coronary vessel.

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Sub 138

142. A method for treating cardiac tissue comprising the steps of:

C18

providing an intravascular catheter of the type having an elongate catheter body and a tissue penetrating member operably coupled to the catheter body and having a tissue penetrating tip disposed at an angle relative to the catheter body, the angle opening in a proximal direction of no more than approximately 90 degrees, the tissue penetrating member being disposed proximate a distal portion of the catheter body, the penetrating member having a first non-penetrating position and a



second tissue penetrating position;  
navigating the catheter through vasculature to a treatment  
site proximate the cardiac tissue;  
moving the tissue penetrating member from one of the first  
or second positions in a direction substantially non-  
parallel to the catheter body to the other of the first  
or second positions; and  
delivering a drug comprising glycoprotein or a fragment  
thereof to the treatment site.

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143. A method for treating cardiac tissue comprising the steps  
of:

C18

providing an intravascular catheter of the type having an  
elongate catheter body, a tissue penetrating member  
operably coupled to the catheter body and disposed  
proximate a distal portion of the catheter body, the  
penetrating member having a first non-penetrating  
position and a second tissue penetrating position, and  
having a tissue penetrating tip disposed at an angle  
relative to the catheter body, the angle opening in a  
proximal direction of no more than approximately 90  
degrees, and further having an actuator member operably  
coupled to the tissue penetrating member and disposed  
proximate a distal portion of the catheter body for  
moving the tissue penetrating member from one of the  
first or second positions to the other of the first or  
second positions;  
navigating the catheter through vasculature to a treatment  
site proximate the cardiac tissue;  
actuating the tissue penetrating member whereby the tissue  
penetrating member moves from one of the first or  
second positions in a direction substantially non-  
parallel to the catheter body to the other of the first

C18  
or second positions; and  
delivering a drug to the treatment site wherein the drug is  
selected from the group consisting of: a peptide, a protein and a  
fragment thereof.

Sub 142  
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147. A method for treating cardiac tissue comprising the steps  
of:

providing an intravascular catheter of the type having an  
elongate catheter body, a tissue penetrating member  
operably coupled to the catheter body and disposed  
proximate a distal portion of the catheter body, the  
penetrating member having a first non-penetrating  
position and a second tissue penetrating position, and  
further having an actuator member operably coupled to  
the penetrating member and disposed proximate a distal  
portion of the catheter body for moving the tissue  
penetrating member from one of the first or second  
positions to the other of the first or second  
positions;

C19  
navigating the catheter through vasculature to a treatment  
site proximate the cardiac tissue;

actuating the tissue penetrating member whereby the tissue  
penetrating member moves from one of the first or  
second positions in a direction substantially non-  
parallel to the catheter body to the other of the first  
or second positions; and

x delivering a drug comprising a genetic material to the  
treatment site.

Please add new claims 164, 166, 167 and 168 as follows:

Ins > 135  
D20 164. The method of claim 132 wherein delivering comprises:  
delivering the drug to myocardium.  
Xms >  
D21